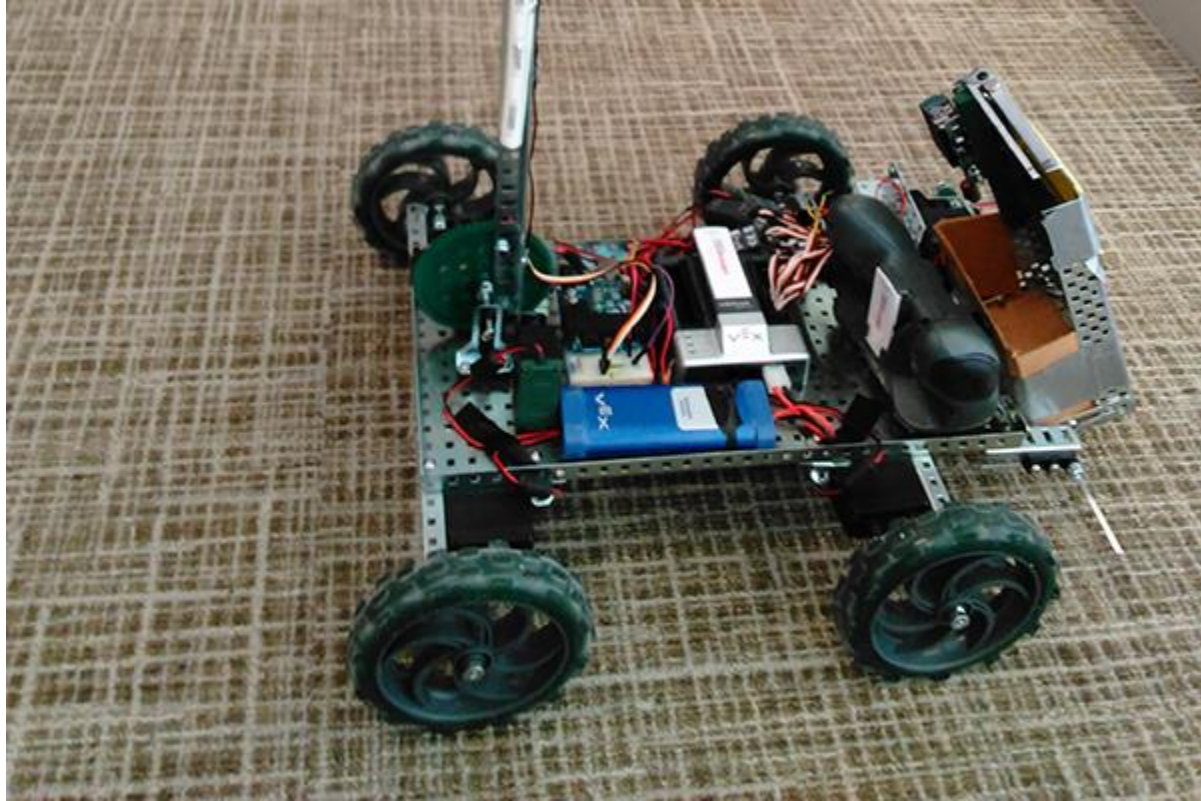


2018 Stryker Engineering Challenge

Andrews students win second place

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The main event at the 2018 Stryker Engineering Challenge was to design and construct a remotely controlled vehicle. (Photo by Gunnar Lovhoiden, professor of engineering)

By: Gunnar Lovhoiden, professor of engineering

The 2018 Stryker Engineering Challenge took place March 22–23, 2018. Student teams of four engineering sophomores competed against each other. The students worked from Thursday at 7:15 p.m. to Friday at 2 a.m., then on Friday from 6 a.m. to 1:45 p.m. The vehicle competition began Friday at 2:30 p.m.

This year there were six teams:

- Michigan Tech
- Western Michigan University
- Notre Dame University
- Purdue University
- Miami University (Ohio)
- Michigan College Alliance (MCA)

The MCA team consisted of three Andrews University students and one Calvin College student: Eric Anderson (Andrews), Darrick Horton (Andrews), Levi Vande Kamp (Calvin) and Justin Wiley (Andrews).

The event started March 22 around 3 p.m. with a tour of some of Stryker's facilities followed by a product demo. At 6 p.m. the teams were served dinner, and while they were eating, a panel of Stryker engineers answered questions the students had submitted during the tour.

The engineering challenge started around 7 p.m. when the teams were asked to build a tower from toothpicks and marshmallows. There were also technical challenge questions and homework that could be submitted for points before the vehicle competition began.

The main event was to design and construct a remotely controlled vehicle. The vehicle had to traverse an obstacle course, find and pick up Lego figures and bring these figures back to their pit area. Only figures brought back to the pit area counted for points.

Stryker employees had constructed models of several downtown Kalamazoo buildings grouped in three areas accessible through an obstacle-type course from each team's assigned pit area. Spread out in the building areas were small Lego figures with magnets glued to one side. Some Lego figures were easily accessible in the open, while some were hidden behind closed doors. Most doors were opened by shining a light at a light sensor. The Lego figures were assigned points according to how difficult they were to pick up. Each team had an opportunity to transport a VIP Lego figure—if the figure was transported within an assigned three-minute window, 20 points were awarded.

The vehicle competition had two parts. Part one involved 20 minutes of picking up Lego figures. Part two was a time trial obstacle course race where each team had to use three different drivers.

Michigan Tech had a clear lead after the technical challenges and the homework and was followed by Miami and Purdue. MCA shared fourth place with Western.

Purdue won the "pick up Lego figures" portion of the challenge and moved from third to first place, followed by Michigan Tech and MCA sharing second place. The vehicle race was won by Michigan Tech, followed by Western then MCA in third. This resulted in Michigan Tech winning the challenge overall, MCA finishing in second place and Purdue placing third.

Gunnar Lovhoiden, a professor of engineering at Andrews University, supported Andrews students at the competition. He says, "I think our team worked really well together. Their design worked well and they represented MCA with honor. Second place—how about that!"